

Serial No.: 10/525,046
Attorney Docket No. 66309-210-2

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A method of regulating the power available at an electrode carried by a the manipulator of an electronic scalpel for cutting tissue and coagulating blood, said scalpel having so as to cause said manipulator to cut and coagulate to obtain blood coagulation, ~~said electronic scalpel being of the kind comprising:~~ at least a rectifying circuit of the main voltage for supplying a rectified and direct voltage to:

at least a radio frequency circuit with at least including a pilot circuit having a wave signal input, said radio frequency circuit producing higher order harmonics to output a current carrier signal at a main frequency ~~set by an oscillator~~, said current signal feeding said manipulator by a radio frequency transformer,

said method comprising the following steps of:

producing a modulating signal;

combining the modulating signal and the current carrier signal to produce a wave form having applying to said manipulator a wave form with at least two or three harmonics resulting from the combination of said current carrier signal and of at a modulating wave,

applying the wave form to the electrode of the manipulator;

regulating the amplitude of said resulting wave form in order to avoid destroying tissue, including at least one of varying the amplitude of a the wave signal applied to said pilot circuit and or varying said rectified and direct voltage supplied to said radio frequency circuit.

2. (Currently Amended) The method according to claim 14 wherein the energy transmitted by the manipulator to the tissue to coagulate is such that the temperature of the tissue ~~zone~~ in which the coagulation takes place is in a range between about 50°C and about 75°C, such temperature range resulting in allowing the denaturation of the fibrinogen and its transformation into fibrine.

3. (Canceled)

4. (Currently Amended) An electronic scalpel to carry out the method of claim 1 of the kind comprising:

a manipulator having an electrode for cutting clotting organic tissues and clotting blood and at least an electrode to close the electric circuit connected thereto;

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a rectifying circuit fed by the mains voltage, for supplying a rectified voltage to a radio frequency circuit;

a pilot circuit;

a radio frequency circuit comprising at least including an electronic switch fed by said rectified voltage and controlled by the pilot circuit for producing an output wave, wherein said radio frequency circuit produces as output a resulting wave formed by the combination of a generally square carrier wave of a selected frequency and a modulating wave, said resulting wave circulating in a wide band resonant circuit for producing a wave at the frequency of said carrier wave, the pilot circuit produces an output for controlling the electronic switch to regulate the amplitude of the wave to avoid destruction of the tissue.

5. (Currently Amended) The electronic scalpel according to claim 4, characterized in that wherein the switch has a parasitic capacity and a transformer feeding the manipulator, said transformer having a primary circuit with an inductance, said resonant circuit comprises includes at least the parasitic capacity of said electronic switch (305) and the inductance of the primary circuit of a radiofrequency the transformer feeding said manipulator.

6. (Currently Amended) The electronic scalpel according to claim 4 including a regulator for modifying the voltage of the pilot circuit, wherein the wave form has an amplitude at the manipulator which is variable by means of a regulator which modifies the voltage of the pilot circuit.

7. (Currently Amended) The electronic scalpel according to claim 4, wherein characterized in that the amplitude of the wave form at the manipulator is variable by the modification of the rectified and direct voltage which feeds said radiofrequency circuit, being maintained constant the voltage feeding the pilot circuit of said at least an electronic switch.

8. (Currently Amended) The electronic scalpel according to claim 4 characterized in that, wherein the the amplitude of the wave form at the manipulator is variable by the modification of the rectified and direct voltage which feeds said radiofrequency circuit and by means of a regulator which modifies the voltage of the pilot circuit.

9. (Currently Amended) The electronic scalpel according to claim 4 characterized in that, wherein said pilot circuit is connected to a control circuit comprising a microprocessor interrupting at predetermined intervals at least the voltage of said pilot circuit so that the

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resulting wave passing through the resonant circuit takes the form of a train of intermittent pulses, each comprising consisting of an amplitude modulated wave.

10. (Currently Amended) The electronic scalpel according to claim 4 characterized in that wherein said switch has a collector and the modulating wave is applied to the collector of said electronic switch, said wave comprising positive half cycles of the ~~through a mains rectified~~ voltage wave without the negative half wave.

11. (Currently Amended) The electronic scalpel according to claim 4 characterized in that wherein the carrier wave has a frequency of about 4 MHz.

12. (Currently Amended) The electronic scalpel according to claim 11 characterized in that wherein the pilot circuit produces a pulse train of the modulating wave having a frequency of about 20-30 KHz.

13. (Currently Amended) The electronic scalpel according to claim 11 characterized in that wherein the modulating wave has a frequency of about 50 Hz.

14. (Currently Amended) The electronic scalpel according to claim 11 characterized in that wherein the modulating wave has a frequency of about 60 Hz.